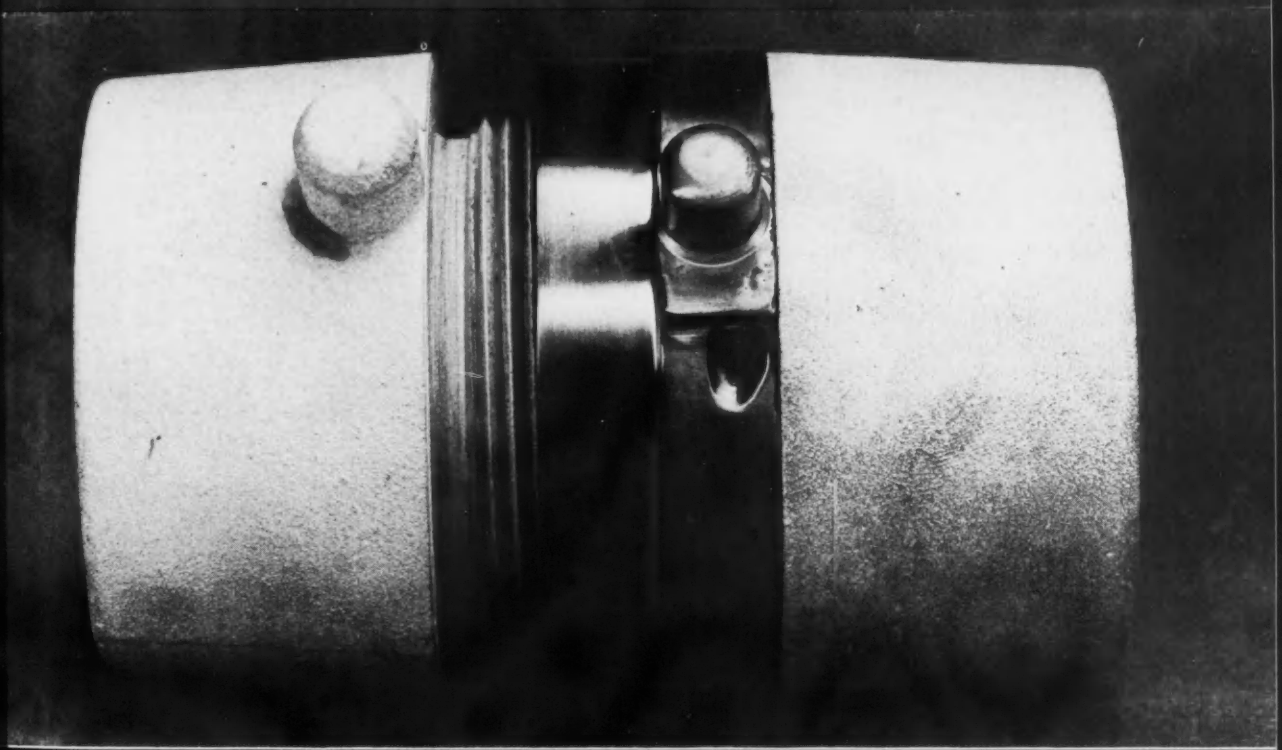
Volunteer Firemen

FEBRUARY 1942

NATIONAL FIRE PROTECTION ASSOCIATION INTERNATIONAL
60 Batterymarch Street Boston, Massachusetts



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Volunteer Firemen

Volume 9 **Number 2**

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Robert S. Moulton	**Technical Secretary**
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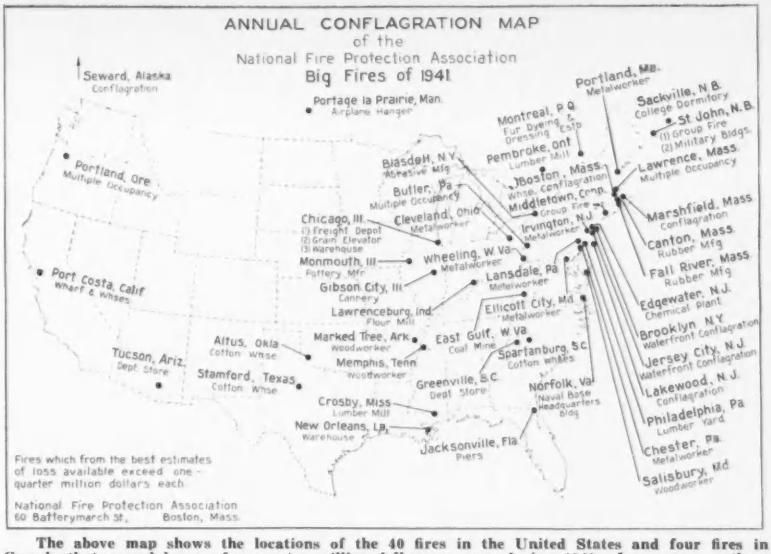
SHORTAGE of copper is likely to force use of substitutes for regular brass hose couplings as explained elsewhere in this issue. The front cover shows an experimental model furnished by W. D. Allen Mfg. Co. of malleable iron couplings (with brass swivel) for 2½-inch cotton rubber lined hose.

TYPICAL of the mis-information that has been going around about what to do in an air raid was the very bad advice that sprinkler systems should be shut off during a raid or blackout. To spike this rumor A. Clifford Hudson, Chairman of the New Hampshire Defense Council's auxiliary firemen's division, has issued the following statement in New Hampshire's Defense Information Bulletin dated January 6th:

"The division of auxiliary firemen warns firmly that sprinkler equipment should not be shut off as a precautionary measure during air raids, alerts, and blackouts; also that they should not be shut off in the emergency of a fire, explosion or bomb hit, unless the equipment is damaged beyond use—so that shutting it off would prevent water waste or unnecessary damage.

"Although sprinklers will speed up incendiary bomb action, they will stop the spread of the fire.



The above map shows the locations of the 40 fires in the United States and four fires in Canada that caused losses of a quarter million dollars or more during 1941. In every case these huge losses were due to violations of one or more fundamental fire safety rules. Losses from the 40 biggest U. S. fires totalled $41,090,000, or an average of over a million dollars per fire. Thus out of some 700,000 fires in the United States last year, 40 fires "which got away" were responsible for over one-eighth of the country's entire annual fire loss of appoximately $322,000,000. The four biggest fires in Canada ran up a total of $2,175,000 loss.

"This announcement was made because of alarming reports that some manufacturers and institutional heads had made plans to shut off sprinkler systems during air raids and alerts."

DIFFICULTIES in replacing burned materials under present conditions make fire prevention of more than normal importance in every community. A recent survey made for the American Hotel Association indicates that 1942 replacement costs for building materials have increased 43 per cent over 1932 figures. The survey also pointed out that replacement of furniture and furnishings may be even more costly, and that prices are still rising.

Any builder would be likely to admit that what is true of hotel structures is also true of other types of buildings. If, due to a failure to heed fire safety rules, civilian property is burned, replacements may prove to be a difficult problem.

LAST month thirteen departments with 184 men joined the Volunteer Firemen's Section for the first time. Eighty-one departments with 1,668 men renewed membership. This makes a total enrollment of 723 departments and 14,739 men.

The following departments are newly enrolled:

Shafter Fire Department, Shafter, California.

Bethlehem Steel Company, Fire Department, Wilmington, Delaware.

Concord Fire Department, Concord, Massachusetts.

Bethlehem Steel Company, Fire Department, Hoboken, New Jersey.

Cumberland County Firemen's Association, Vineland, New Jersey.

Bethlehem Steel Company, Shipbuilding Division, Brooklyn, New York.

Mooresville Fire Department, Mooresville, North Carolina.

South Zanesville Volunteer Fire Department, South Zanesville, Ohio.

Port Orford Volunteer Fire Department, Port Orford, Oregon.

Bethlehem Steel Company, Fire Department, Pottstown, Pennsylvania.

Victoria Fire Company, Victoria, Virginia.

Vashon Island Fire Department, Vashon, Washington.

Industrial Collieries Corporation, Barrackville, West Virginia.

FIRE losses for 1941 were $322,357,000 or over one million dollars a month above the 1940 figure of $306,469,520, according to the National Board of Fire Underwriters. These figures are based upon notices of incurred loss received by insurance companies, members of the board, plus an allowance for unreported and uninsured losses.

The following table shows the monthly fire losses for both 1940 and 1941.

	1940	1941
January	$36,260,650	$26,470,000
February	34,410,250	26,102,000
March	29,788,800	31,471,000
April	26,657,190	29,330,000
May	23,446,590	25,637,000
June	19,506,000	24,943,000
July	20,322,800	23,698,000
August	20,722,100	24,122,000
September	21,198,000	24,668,000
October	22,091,140	30,833,000
November	23,443,000	23,822,000
December	28,617,000	31,261,000
Total 12 months	$306,469,520	$322,357,000

Only one hose truck could be dispatched to this blaze which wiped out 13 buildings with $165,000 loss.

Flying brands from air-raid fires ignited the roof of this large frame school. Despite high winds, two pumpers put out this fire.

Honolulu Air Raid Fires

Fire Chief Blaisdell Describes Handling of Fires Set by Jap Raiders Who Machine-Gunned Men and Apparatus

"SURPRISE was the word for it. While certain plans to be followed in the event of an attack on this city had been made, more were in a formulative condition.

"Within half an hour after the first attack, all off-duty firemen were called in by radio broadcasts from three stations, and all but a few who live in rural Oahu had reported within two hours. Scores of volunteers thronged the stations, and workmen from other city departments were assigned as emergency firemen.

"Thus it was possible to use each of our units as a company. In addition to this, nine commercial trucks were commandeered; each was loaded with 1,200 feet of 2½-inch hose and placed in strategic locations, each in charge of a trained fireman, whose position was filled by a volunteer. This was also done with our one reserve pumper and a Reo truck with booster equipment.

"During the 72 hour period following the first attack, one unit only was dispatched to each alarm. Boxes which came in were not transmitted, all assignments being made by telephone. During the height of the attack, no effort was made to mop up, it being felt that, immediately after a fire had been extinguished enough to prevent its spread, apparatus should be returned to quarters in readiness for other fires.

"As near as we of the Fire Department can tell, there were no incendiary (Thermite) bombs dropped, all of them being demolition.

"Necessarily, our efforts were directed toward the best protection possible for the high value district and the waterfront. Three of our companies had been sent to Hickam Field where fires had been started in hangars, barracks and planes on the landing field. Hickam's apparatus had been put out of service by bombs.

The following account of the first American city to fight fires under an air-attack is excerpted from a letter by Fire Chief W. W. Blaisdell of Honolulu, to N.F.P.A. General Manager Bugbee.

"The men of these three companies stayed with their lines amid a hail of machine gun bullets from raiding planes and shrapnel from large demolition bombs. The hydrants were rendered useless when the main was broken by a bomb and our three pumpers drew water from the bomb crater, pumping through 6,400 feet of 3-inch and 2½-inch hose, the last apparatus returning to the city at midnight.

"Each piece of apparatus bears holes from bomb fragments and bullets. One pumper was put out of commission when machine gun fire demolished the ignition switch, and had to be towed back. One hosewagon was set on fire, presumably by an incendiary bullet which pierced the gasoline tank. The motor, however, was not badly damaged and this piece will be put back into service soon, as repairs are being rushed on the body. The engine was put back into commission the same afternoon.

"OUR greatest loss and the one most keenly felt was that of two captains, one with 34 years' service and the other with 23½ years, and a hoseman who had been in the department a little over three years. These men were killed by machine gun bullets from dive bombers and may God hasten the day when those treacherous Japs shall pay for this. Six other firemen were injured, one a lieutenant; one has returned to duty and the five are still in the hospital recuperating from wounds in various parts of their bodies.

"On December 7th we answered 39 alarms. Not all were caused by bombs, and not all the bombs that hit buildings started fires. The largest, in the semi-residential district, involved 13 buildings before it was brought under control with one hosewagon manned by a captain and six hosemen. This loss will approximate $165,000. The engine which ordinarily responds with this hosewagon confined another fire to the building of origin, scorching the walls and roofs of houses on either side.

"Simultaneously with the above mentioned fires, which were only a block apart and both started by bombs from the same plane, a large two story wooden frame school, built in the shape of a U, caught fire, probably from sparks from one or both of the other two fires. Meanwhile a high wind had arisen, which prevented our streams from doing very effective work. Nevertheless this building was saved by the crews from the engine above mentioned, the lieutenant in charge having left two men at the dwelling fire using hydrant pressure and moving in on this fire, in conjunction with another engine which had been dispatched. Using four 2½-inch lines they confined this fire to the second floor and roof of the bottom of the U.

"We have recently purchased seven small trucks without body, which our shop is rapidly converting into hosewagons. In the event of another air raid, we have made arrangements for nine other trucks and drivers to report at designated points, together with sufficient volunteers to man them. Our fire wardens (civilian volunteers) are constantly instructing our people how to handle incendiary bombs and continually warning them of the not remote possibility of other attacks.

"As for advice to Fire Chiefs in other cities, I can only say this. Prepare for the worst and insist on getting enough equipment on hand to handle the biggest fire they can imagine, in the most hazardous district of their cities."

CONFLAGRATIONS WERE AN OLD STORY AT MANILA, P. I.

THE conflagrations visited upon areas of Manila, the capital of the Philippines, as a result of attacks by Japanese air raiders on the week-end following Christmas were not an entirely new experience for that island metropolis. In the past ten years alone the city has suffered at least three major conflagrations which, according to available information, equalled or exceeded the fire damage caused by the vicious assault by the Japs before the capture of that city on New Year's Day.

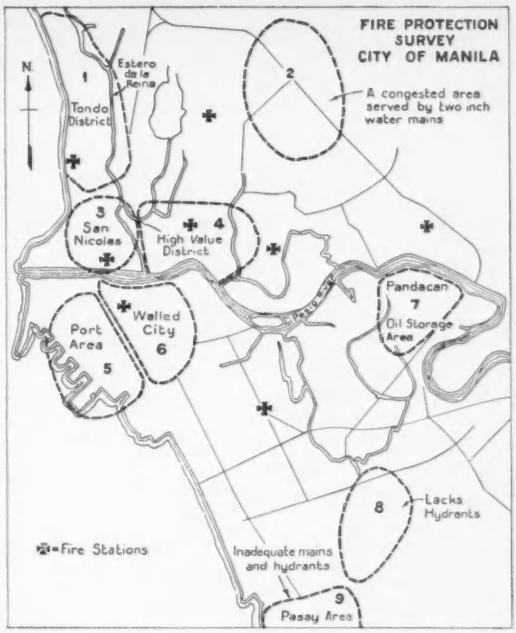
As recently as May 3, 1941, a major conflagration swept the Tondo section of the city (see map), and brought glaringly to light the deficiencies in the city's fire defenses. This fire destroyed 3,000 homes leaving 20,000 native workers homeless. The flames swept over 100 city blocks near the shore of Manila Bay.

The fire was caused by a native workman who was making lard. When the lard kettle caught fire he turned a garden hose on it causing the fire to spread quickly through the flimsy structures of the district. Most of these buildings had thatched roofs.

There were no fire walls whatever in the area. Streets were scarcely wide enough for two vehicles to pass. Water mains were only 4 or 6 inches in diameter with hydrants widely separated. A 30 to 35 mile an hour wind drove the flames along until they reached an estuary, which provided the needed fire break.

Following this conflagration, the United States Army made a survey of the city's fire protection facilities in cooperation with the fire department. This survey published in detail in the Manila newspapers last June, emphasized that the city was vulnerable to sabotage by fire. It also pointed out the importance of many installations and facilities located in the city to the defense of the area in an emergency.

Now that Manila is temporarily under the control of the Japanese military forces, it is obvious that no confidential military information can be divulged by commenting on the inadequacies of that city's fire protection. These inadequacies were evidenced by the series of conflagrations that have visited the city in the past ten years prior to this war, and were itemized in a report by United States Army Engineers published in Manila newspapers last June. The map at the right shows the location of the fire stations in relation to special fire hazard areas indicated by the Army's published fire protection survey.



In the survey the city was divided into nine fire areas, as indicated on the above map. Fire protection was reported as reasonably adequate for normal peacetime needs *only* in the central high value district (No. 4 on map).

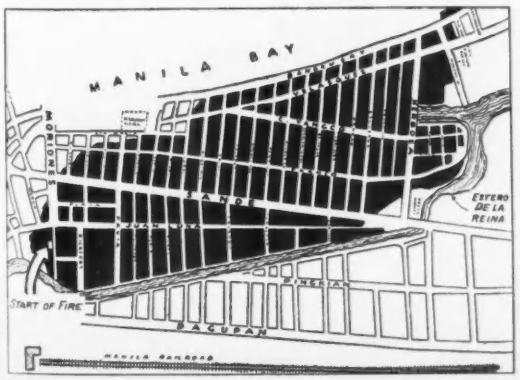
THE published survey commented on the fire protection shortcomings of each of the fire areas of the city, pointing out the inadequacy of water mains, shortage of hydrants and other deficiencies. The harbor area (No. 5 on map), which received considerable attention from enemy air raiders, before the city was evacuated by the defending forces, was indicated as particularly inadequate in its fire protection.

Manila, when the war started, was a city of about 650,000 persons. This is about the population of Pittsburgh, Pa., or Washington, D. C. As of last June the Manila fire department consisted of 126 paid men working on a single shift, as compared with close to 900 firemen working on a 2-platoon system in each of the other two cities mentioned. The Army survey pointed out that the Manila fire force should be doubled for even a minimum of normal peacetime protection.

At the time of the conflagration last May the Manila fire department had only 10 first-line pieces of apparatus. These were four 750-gallon pumpers, four 500-gallon pumpers, an aerial ladder and a service ladder truck. In reserve, were a number of old pieces of apparatus purchased prior to 1915. These included 5 pumpers, 6 hose trucks, 3 combination chemical and hose trucks, an aerial ladder and a service ladder truck. It is likely that this apparatus was horse-drawn.

Recent newspaper and radio descriptions of Japanese attacks on Manila have mentioned the destruction of noted landmarks in the old "Walled City" including historic Santo Domingo church, Deletran College, and the Manila Herald building. It is probably not generally remembered that the "Walled City" area suffered a conflagration as recently as August 13, 1932, in which three city blocks were destroyed. Landmarks lost at that time included two colleges, a museum, the Bureau of Public Works, and the Land Registration Office. The loss was $2,248,000.

Obviously a city known to be so vulnerable and ill-protected against fire does not favor a strong defense.



Map showing the native Tondo section of Manila which was devastated by a conflagration last May. Three lives were lost and more than 20,000 persons were made homeless. The map shows how the fire largely burned out an area between Manila Bay and the Estero de la Reina. A similar large conflagration destroyed 40 city blocks in the same section in 1937.

FIREMEN'S TRAINING

N.F.P.A. Firemen's Training Committee

TWO meetings have been held since the organization of this committee last October under the chairmanship of W. Fred Heisler of Oklahoma A. & M. College. Both meetings were well attended, the first having been held in Chicago on December 3 and 4 and the second at Memphis on January 5.

As a result of these meetings, the committee hopes shortly to issue in advance report form a suggested outline of training for auxiliary firemen. This subject was thoroughly discussed at the Chicago meeting which authorized Chairman Heisler to prepare a preliminary draft based on the discussion. Mr. Heisler was authorized also to furnish this draft to the U. S. Office of Civilian Defense which had expressed an urgent need for this material. The outline may therefore be shortly issued by OCD as well as the N.F.P.A. With some minor revisions, the chairman's draft was approved at the Memphis meeting.

At the Memphis meeting a preliminary outline of suggested training for members of industrial fire brigades was discussed and approved. A subcommittee was authorized to complete the outline and submit it to the committee for final letter ballot. It is likely, therefore, that this second outline covering training of members of industrial fire brigades will also be shortly available in advance report form. N.F.P.A. members will be notified when this material is available.

The committee has also approved, as a basis for its further consideration of firemen training material, the outline of planned fire service training prepared by Chairman Heisler. This was published in VOLUNTEER FIREMEN for July, 1940.

The Memphis Instructors' Conference

KEY men in firemen's training met last month in what was the fourteenth annual session of the Fire Department Instructors' Conference held in Memphis. This continues to be the biggest event in the field of firemen's training each year.

The meeting emphasizes that it is just what its name implies. It is not a convention nor is it a training school. It takes no official action on any matter and advocates no doctrine. Its sponsors are the Fire Prevention Department of the Western Actuarial Bureau of Chicago, Richard E. Vernor, Manager, and the Memphis Fire Department, Irby C. Klinck, Chief. Mr. Vernor, who is also N.F.P.A. Vice President, is Chairman of the Conference. Harry K. Rogers and J. Burr Taylor of Mr. Vernor's staff are Vice Chairman and Secretary respectively.

Representatives were present this year from 27 states, the District of Columbia, and the Canal Zone, a total of 364 being registered, 100 more than at any other previous Conference. Among those present were directors or local officials taking a leading part in the respective state training programs, and in addition city drillmasters and training directors were present from many important cities.

As might be expected, wartime problems of fire departments were headlined in the various topics presented for discussion by leading experts in their respective lines of work.

A. C. Hudson, State Fire Coordinator of New Hampshire, presented "The Selection of Fire Department Auxiliaries." Emmett T. Cox, Instructor of the Indiana Inspection Bureau at Indianapolis and Assistant Director of the Indiana Fire Service Training Schools, presented "The Training of Fire Department Auxiliaries" and "The Training of Industrial Brigades." Sanford Herberg, Engineer, Fire Underwriters' Inspection Bureau, Minneapolis, discussed "Emergency Water Supplies," and A. H. Gent, Associate Engineer, Fire Prevention Office of the Office of Chief of Engineers, U. S. Army, discussed "Emergency Apparatus and Rehabilitation of Equipment." N.F.P.A. Engineer Charles S. Morgan presented "Fire Prevention as a Defense Measure."

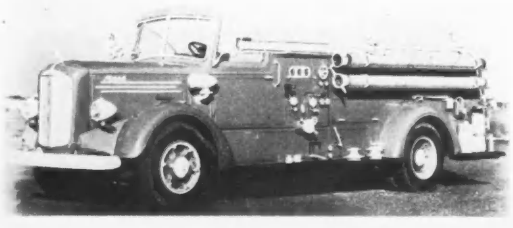
Notable and timely additions to this year's Conference were made available by Major Harold R. Brayton of the Chemical Warfare School, Edgewood Arsenal, Md. Major Brayton is an old member of the Conference, having been for many years Director of the Texas Firemen's Training School. With the assistance of several other distinguished Army officers, he presented such subjects as "Chemical Warfare-Incendiary Agents-Explosive Bombs," "War Gases and Decontamination," and "Fire Fighting As Applied to Military Explosives and Ammunition."

Major Brayton put on two demonstrations. One of these was an outdoor demonstration of incendiaries used in chemical warfare and the other was a demonstration of how a municipal control center would operate during an air raid. In the latter demonstration he was assisted by a staff of Memphis city officials including Mayor Walter Chandler. During this demonstration, an actual exercise was held showing how raid incidents such as fires and bombings are reported and how fire apparatus, rescue squads and other emergency services are dispatched to deal with these incidents.

A demonstration of fire department work during a blackout was staged by the Sebring, Ohio, Junior Fire Department under Chief Sal Trainer. A first aid job was carried out under blackout conditions.

With all the emphasis on special wartime problems of training, a report made by N.F.P.A. Chief Engineer Horatio Bond revealed the impressive progress that has been made in regular firemen's training work during the past year. This reported figures which were published in VOLUNTEER FIREMEN in November showing that an estimated 80,000 firemen were receiving regular training during 1941. The thought was expressed that firemen's training was so well organized that it could handle the training of auxiliary firemen better than the civilian defense authorities would find it possible to train other civilian defense workers.

New topics worth special mention were "Safety Practices for Firemen" by Batt. Chief George S. Lockhart, Superintendent of Instruction of the Minneapolis Fire Department, and the "Testing of Life Lines," a report on research experiments by Professor R. J. Douglas of Oklahoma A. & M. College.



Here's a typical pumper meeting government requirements for conservation of chromium, nickel, copper, stainless steel and other essential war materials. Made by Mack Trucks, Inc., this pumper has the usual brightwork replaced by cream colored trim contrasting with the usual fire apparatus red.

OCD Outlines Courses For Civilian Enrollees

"TRAINING Courses for Civilian Protection," a 34-page publication of the U. S. Office of Civilian Defense, outlines training courses for civilians enrolled in the various local defense services. The instruction recommended for auxiliary firemen and members of rescue squads is of interest to fire departments, since these workers will be under the direction of the fire chief and work with the other firemen. Fire watchers, whose duties are to spot and deal with small fires set by incendiary bombs, are responsible to the chief air raid warden, but their instruction is of incidental interest at least to the fire department.

Certain basic instruction for auxiliary firemen is specified, as follows:

First Aid	10 hours
Handling Incendiaries	3 hours
Fire Defense Methods	7 hours
Gas Masks	2 hours
General Course	5 hours
Drill	5 hours
Total	32 hours

This is a selection from certain courses which all enrolled workers are given. The general course is to explain how the auxiliary fireman fits into the general organization for civilian protection. The courses on gas masks, incendiaries and fire defense methods all deal with special wartime problems which every worker must know about.

But this is not all by any means. The auxiliary fireman also has laid out for him the following:

Initial Training	20 hours
Advanced Training	30 hours
Supplemental Training	
—As Time Permits	

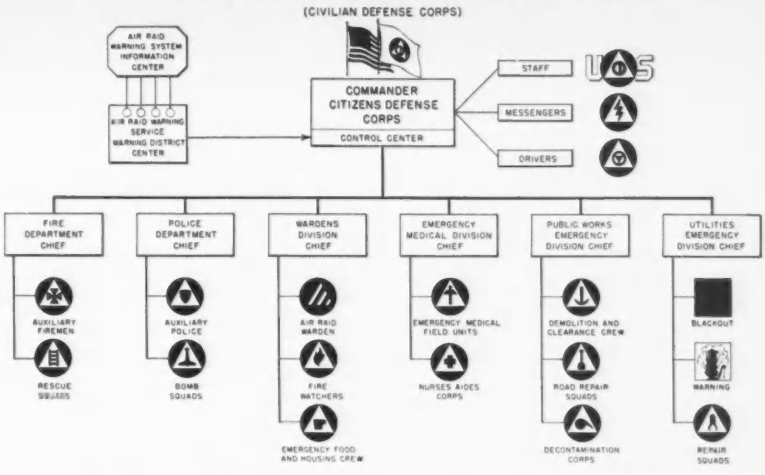
The 20 hours' initial training is to make auxiliaries immediately useful in case of air raids. They are trained for ground work such as laying lines and handling hose, carrying and placing short ladders and supplying regular firemen with tools and equipment. The 30 hours of so-called advanced training carries them to a somewhat advanced state of proficiency in climbing ladders, advancing hose lines and working in buildings. Men with supplemental training are made of still further use to relieve regular firemen in such duties as driving and placing equipment, operating pumpers, and producing proper hose streams.

This approach to the training of auxiliary firemen is set up as a minimum standard by OCD and men who wish to wear the Maltese cross OCD civilian defense insignia as an auxiliary fireman must cover in training classes at least this much ground. It is not necessary that new courses be set up in any city or state where regular courses for firemen's training exist. The regular courses given firemen may be given to auxiliaries, and if the state defense council is satisfied that the minimum required instruction is given, the insignia may be authorized. It is not necessary to reinstruct men who have already covered all or part of the prescribed subjects, nor need the details of the courses be exactly as outlined.

Rescue squads get the same basic training as auxiliary firemen under the OCD plan, except that they have 20 instead of 10 hours of first aid, and an additional 3-hour course in defense against war gases. Additional training for rescue squad members as individuals, as teams and in combination with fire and other companies is recommended. No specified number of hours is given.

For fire watchers, only 12 hours' basic training is outlined: 2 hours of drill formations (they've got to be able to make a presentable appearance in parades), the 5-hour general course, 2 hours on gas masks, and 3 hours on incendiary bombs. To obtain a "First-Class" rating, however, they must satisfy the chief air raid warden of their special knowledge of conditions in the district to which they are assigned.

CIVILIAN PROTECTION ORGANIZATION FOR A MUNICIPALITY



Other OCD Developments

OCD last month got a new executive, James M. Landis, Dean of the Harvard University Law School. Director LaGuardia, who remains on the job, reported that he was urging Congress to approve legislation for the compensation of wardens and other workers injured in an air attack. State and local defense councils were also urged to obtain, as loans or gifts, equipment and material needed for civilian defense crews. While legislation is also pending to authorize equipment and tools for auxiliary firemen, police, wardens, rescue squads and other crews, all of this that can be obtained locally will relieve potential shortages in materials that are needed for other war uses.

Settled also was the question of how Boy Scouts may be used. They may assist emergency medical units, serve as fire watchers and help develop local messenger service.

According to an official tabulation released last month by Director LaGuardia a total of 3,516,600 volunteer workers were enrolled in various branches of civilian defense on January 12th, as compared with 949,508 workers enrolled on November 23rd, two weeks before the attack on Pearl Harbor. Auxiliary firemen with 258,967 men enrolled formed the second largest group already assigned to protective services. In first place came the air raid wardens 607,307 strong. Auxiliary police forces reported 148,359 workers and medical services 136,676.

A Film About Incendiary Bombs

"FIGHTING the Fire Bomb," prepared under the technical direction of the Chemical Warfare Service, U. S. Army, and the National Fire Protection Association. Approved by the U. S. Office of Civilian Defense and distributed by Transfilm, Inc., 9 Rockefeller Plaza, New York, N. Y. (400 ft., 16 mm. sound film, runs about 30 minutes. Color print $68, black and white print $38). Shows the behavior of incendiary bombs in a typical dwelling. Instructs householders in the proper use of first aid fire equipment to control the burning of bombs and to protect surroundings. An instructor's manual, prepared by Safety Research Institute, New York, is furnished with each print.

FIRE PROTECTION IN BLACKOUTS

By Robert S. Moulton,
N.F.P.A. Technical Secretary

Blackouts are not just a theoretical problem as far as fire fighters are concerned. Fire fighting operations are likely to be under considerable difficulty where fire fighters working without lights must locate and control a fire inside a blacked-out building. In the following article, N.F.P.A. Technical Secretary Moulton tells some of the considerations involved in preventing fire losses during blackouts. Some persons have cautioned that improperly conducted blackouts might cause more accidents and damage in the long run, than might result from spasmodic nuisance raids by enemy aircraft. A comprehensive manual on "Blackouts," published by the U. S. Office of Civilian Defense, describes in detail how to prepare for blackouts, but says little about the fire hazard problems involved.

THE blackout brings many fire protection problems to North American cities. The British experience, while helpful in certain aspects of these problems, does not provide the answer to various troublesome questions. Thus far practically all of the attention to the blackout problem has necessarily been concentrated upon the main objective of securing an effective complete blackout. The publication of the Office of Civilian Defense, Washington, D. C., entitled "Blackouts" provides a comprehensive discussion of the theory and practice of blackouts, with practical suggestions as to methods, but except for a warning against use of flammable materials such as nitrocellulose film on windows, and a caution against obstruction of emergency exits, this publication is virtually silent on the various fire protection problems of the blackout in which N.F.P.A. members are most interested.

The first consideration of fire officials is the effective operation of municipal fire departments and auxiliaries under blackout conditions. Automobile headlights are very conspicuous from the air and in blackouts all automobile lights, even of emergency vehicles, must be drastically restricted. Only dim blue lights are allowed, which means that speeds must be reduced, with consequent lengthening of the interval between the alarm and the arrival of the apparatus at the fire.

WHERE blackouts are instituted prior to the completion of an air raid system organization, and reliance is placed upon the normal peace time alarm procedures, the problem arises as to how to find the street fire alarm box in total darkness. Fire alarm box marking lights, such as are used in many large cities, must be turned off in a blackout. White paint will help in locating boxes, except under snow conditions, and luminous markings may be used, but no such expedient will make the box visible from any great distance. Fire alarm boxes thus appear likely to be of less value as a means of sending an initial alarm, except where people are so familiar with box locations in their vicinity that they can find boxes in the dark. On the other hand, under blackout conditions, the fire alarm system is likely to prove invaluable in transmitting official messages. Possibly a blue identification light for fire alarm boxes, already used in some cities, will come into more general use.

Prompt fire extinguishment is of even greater importance during air raids than in normal times, because a fire furnishes illumination so that enemy bombers can find their targets. This applies not only to fires set by incendiary bombs, but also to fires from accidental causes, and to fires set by enemy agents who can operate with less fear of detection under blackout conditions.

Floodlighting the exterior of important buildings has been widely recommended and practiced as a measure to facilitate the work of guards and watchmen in preventing the approach of unauthorized persons bent on arson or sabotage. Floodlighting and blackouts are manifestly inconsistent, but many authorities mainly rely on floodlighting, without apparent thought to the prevention of access by potential saboteurs during blackouts. Floodlighting is obviously desirable, but it is a mistake to place sole reliance upon it. Automatic detection equipment operating on the electric eye principle and using invisible ultra violet or infra red light may be continued in operation during blackouts.

The floodlighting equipment provided by fire departments to furnish illumination for night fire fighting cannot be used during blackouts. Some fires themselves provide all too ample light but this cannot be relied upon by the firemen. All of this means that fire departments should be able to operate effectively in total darkness. With sufficient practice, most of the operations of raising ladders, connecting hose and the like can be performed in darkness, but the over-all efficiency of fire fighting operations must inevitably suffer. White or luminescent paint on parts of apparatus, and luminescent bands on firemen's clothing may help but there is still much to be done in working out the details. Suitable paint will help in locating hydrants, but there is no way to see and locate fire in a building by looking through blacked out windows. Thus automatic fire alarm or sprinkler equipment to promptly detect a fire and give an alarm assumes more than normal importance.

OWING to the probable delays in blackout fire fighting by public fire departments, as well as the probability of a much greater number of incendiary bomb fires than can be handled simultaneously by the municipal fire fighting forces, private fire protection is of major importance, and here again the blackout brings special problems. In the large factory or institution with a private yard hydrant system and organized fire brigade the situation is closely parallel to that in the public fire department.

Where windows are blacked out, and the normal interior lighting continues during blackouts, ordinary interior fire fighting will be the same as under ordinary conditions. However, very few buildings to date have been provided with blackout protection for windows, and in case of air raids at night it will be necessary to put out all interior lights. How then are extinguishers, hand hose, and interior fire alarm boxes to be located, to say nothing of fire-doors, elevator shafts and stairways so important during a fire? Luminescent marking seems to provide the best available answer. Low intensity blue lights may also be used for this purpose, and to mark exits.

Luminescent paints are of two types, those utilizing radioactive materials which will glow indefinitely, and those which depend upon the excitation of some external light source. The latter type is much less expensive and avoids the danger of poisoning from radium and related compounds and the personal hazard from continued exposure to radium radiation. These luminescent paints ("phosphorescent") continue to emit a glow for hours after they have been exposed to sunlight or a bright artificial light. They also emit a visible glow while exposed to radiation from an invisible light source of ultraviolet light. Such materials are commercially available as a result of their use for advertising signs and posters. In a form resembling oilcloth the material may be tacked up to mark fire fighting equipment, exits, etc., or may be sewed in the form of conspicuous belts or armbands on firemen's clothing.

Nassau County-New York City Mutual Aid Plans Now Operative

ACCORDING to a bulletin of the Nassau County Fire Commission, dated December 31, 1941, mutual aid plans following those described in the January issue of VOLUNTEER FIREMEN, are now in effect between the volunteer departments of the County and the New York City Fire Department. Some adjustments in the assignment cards as originally proposed have been made due to the failure of a few of the volunteer departments to secure the necessary authorization promptly. A new direct telephone line to the County Fire Commission office is to be used for all mutual aid calls.

The air raid warning signal adopted for Nassau County is a steady or continued blowing of the fire siren or horn. This signal was adopted to avoid confusion with any of the coded fire alarm signal numbers used by the various fire departments.

OPM Order Permits Use of Rubber for Fire Equipment

THE U. S. Office of Production Management has issued a revision of OPM Order No. M-15-b which restricts the use of rubber. The revised order issued by Director of Priorities Donald M. Nelson on December 27, 1941, permits the use of rubber "to manufacture fire hose and other essential items for fire extinguishing apparatus." As with other essential users of rubber, the order specifies that manufacture and processing of rubber shall not be at rates greater than the rate of consumption in the manufacture of similar items during November, 1941.

The general restrictions on use of rubber do not apply to orders assigned an A-3 preference rating or better, as might be the case with fire equipment needed to fill specified defense needs.

Minneapolis Raises Price For Outside Aid

AS a result of a study of ten years' experience in the cost of furnishing fire department protection to suburban areas, the City Council of Minneapolis, Minnesota, recently ordered a three-fold increase in the city's charges for supplying such protection to communities not having full-time fire departments. The study showed that in the interests of its own taxpayers the city could not afford to extend outside service at the former rates which averaged about $75 per fire.

The principal features of the new plan, based upon the actual cost of sending the full-paid city fire department on outside calls, provide for an annual standby charge of $3 per $10,000 valuation, with minimum charges of $12 for individual property owners, $50 for corporations, and $100 for villages. The new rules make it clear that the city's response to calls is not guaranteed even though the outside subscribers must pay a standby charge. Calls for help are to be answered only at the discretion of the city fire chief when it does not handicap city protection.

Additional charges for each response vary from 90 cents to $2.30 an hour for each man and officer sent, and from $65 to $100 for each piece of apparatus during the first hour, and $45 to $75 for each additional hour. Surety bonds are required to guarantee payment. Contracts are for continuous terms, subject to cancellation on 30 days' notice.

Coronet Magazine Includes Fire Safety Article

THE February 1942 issue of Coronet Magazine, features an article by the well-known writer of fire prevention subjects Paul W. Kearney. Under the title "The Deadly Top Floor", Mr. Kearney tells how fatal fires so frequently trap persons in their own homes. He gives the proper technique for persons to follow when a fire occurs at home during the night.

Seattle Department Trains "Fire Parties"

THE Seattle Fire Department reports that some 11,500 employees of plants in that city have been given training on plant fire fighting and in the control of incendiary bombs. The groups in these plants are called "fire parties." The fire department advises that eight recent fires in plants have been controlled with small loss by these groups.

The department is giving especial attention to the protection of hospitals throughout the city against possible air raid attack. Meetings have been held in all hospitals and plans worked out for their proper protection.

Field Staff for Kentucky Fire Defense

THE Civil Defense Commission is developing a staff of men to promote the organization of local civilian defense councils and generally act as contact men between the office of the state commission and the local authorities working on defense matters. A part-time volunteer staff has been recruited for this purpose made up of four deputies of the state fire marshal's office, six fire department field instructors of the State Department of Education, and twenty insurance company field men. They were given a one-week short course last month.

N.F.P.A. Membership

Every member receives a handsome membership certificate illustrating the history of fire protection.

N.F.P.A. membership is available to fire companies and fire departments through the Volunteer Firemen's Section of the National Fire Protection Association. Here's the simple plan:

MEMBERSHIP in the National Fire Protection Association costs $10 per year. The Volunteer Firemen's Section is designed to give each fire company the advantages of N.F.P.A. membership.

- As a member, the fire company receives at its headquarters a complete set of all regular N.F.P.A. publications. This includes the official *Quarterly* magazine, as issued.

- As a special service to the Volunteer Firemen's Section, each member fire company is entitled to have copies of the monthly magazine VOLUNTEER FIREMEN sent to the home addresses of 10 firemen.

- If more than 10 firemen want to receive the magazine, an additional $1.00 should be sent in with the membership fee for each fireman in excess of 10 enrolled. Because of the large amount of material mailed to members, not less than $10 can be accepted from any company.

FIRE HOSE COUPLINGS FOR WARTIME USE

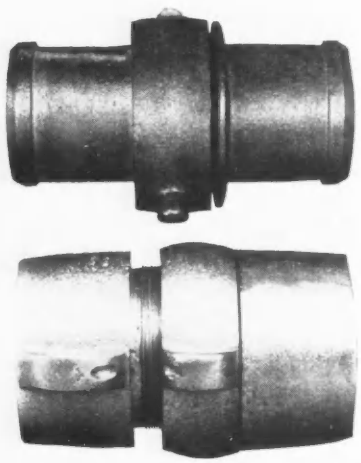
Research for OPM by Underwriters' Laboratories, Inc., Indicates Malleable Iron Couplings Are Acceptable Substitutes for Brass

THE wartime emergency has threatened to make conventional hose couplings of brass all but impossible to obtain. Thanks to the U. S. Office of Production Management, Underwriters' Laboratories, Inc., and the fire hose coupling manufacturers, it appears possible that hose couplings made principally of malleable iron may be an acceptable substitute which there is some chance of getting.

A picture of an experimental model of a malleable iron coupling appears on the cover of this issue. It may be some time before such couplings will actually be available.

Last July OPM asked President Alvah Small of Underwriters' Laboratories, Inc., how far iron or other metal could be substituted for the brass couplings on fire hose. The immediate problem had come up because of the prospective purchase of large quantities of fire hose for use in army camps, for civilian defense, and for delivery abroad under lease-lend commitments. The couplings for the British hose, a snap type, offered a slightly worse problem than the American couplings, because they contain more metal.

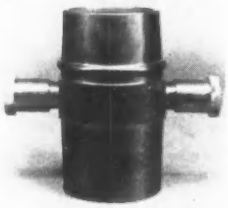
The Laboratories and the manufacturers tackled the problem in September, assigning the job to a group headed by R. W. Hendricks, Hydraulic Engineer, Underwriters' Laboratories, Inc., and Chairman of the N.F.P.A. Committee on Hose Couplings and Nozzles. He was assisted by E. E. Hensen, Sales Manager, Elkhart Brass Manufacturing Company, Elkhart, Indiana; H. E. Meng, Vice President, W. D. Allen Manufacturing Company, Chicago; H. M. Frecker, Eureka Fire Hose Company, New York, representing the Technical Committee of the Rubber Manufacturers' Association; and J. A. Durr, Development Engineer, Malleable Founders' Society, Cleveland.



Shank coupling for 2½-inch cotton rubber lined fire hose (Above) compared to conventional expansion ring type (below). Shank type couplings require about half as much metal as the conventional expansion ring type.

This group was asked to prepare a draft of specifications for malleable iron couplings, after preliminary consideration of gray cast iron, forged steel and plastics, for one reason or another were judged impractical. They were to obtain sample couplings and conduct further tests and report.

Present practice in fire hose couplings provides that the hose engages a tail piece into which it is held by an expansion ring. This provides a smooth waterway and is a type of coupling which has given excellent service over a period of years. One possibility which everyone appeared to feel should be investigated was the use of a shank type coupling. In the shank type the hose fits over a shank or nipple and is clamped to it by a ring clamp.



A hose coupling of British pattern. British couplings are snap type and weigh about seven pounds as compared to six pounds for the common American screw thread type.

After further study the expansion ring type was favored because (1) fire departments are equipped with the necessary tools for applying them, (2) the coupling provides a full and smooth waterway without obstruction, and (3) the method of attachment is more satisfactory and less likely to cause delay and trouble. This was the result of a large number of tests made of shank type couplings.

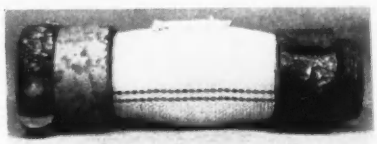
Features of specifications for the emergency type hose couplings which were agreed upon then were an expansion ring type coupling of malleable iron with a brass swivel made of 68 percent minimum copper; wire ring connection of brass or steel wire and brass expansion rings. The usual alternate methods of lug design and swivel engagement are accepted. Over-all protective coating is to be required. It was also agreed that British couplings furnished under lease-lend commitments would be furnished of the malleable iron type.

So far as the metal problem involved is concerned, these specifications would reduce the amount of brass required by approximately 2/3 as it would be limited only to the weight of the swivel.

The tests carried out at Underwriters' Laboratories included a great many thoroughly practical investigations. For example, the malleable iron couplings were given rough usage tests. A set of 2½-inch couplings of the expansion ring type made entirely of malleable iron was attached to a 10 ft. length of 2½-inch cotton rubber-lined hose. The hose and couplings were dropped eight times from a work bench to a concrete floor, a distance of 3 feet. The 10-ft. length of hose was then doubled in the middle and the couplings were dragged back and forth rapidly 800 feet over iron trench covers in Underwriters' Laboratories' hydraulic laboratory. The couplings were also dragged rapidly for a distance of six blocks over a street paved with granite cobble stones. They were then violently thrown on a concrete floor from a height of about 12 feet. This was repeated four times.

Examination and hydrostatic test of the couplings after the rough usage tests showed no evidence of material injury to the couplings. The swivel turned freely showing that it had not been deformed.

The couplings had no protective coating and although in a corrosion test the external surfaces rusted quite badly no difficulty was experienced in rotating the swivel or in joining the male and female couplings. The test showed clearly, however, the need of a metallic protective coating for couplings having malleable iron parts. This and other preliminary corrosion tests indicated the desirability of further study of corrosion and protective coatings which were continued by Underwriters' Laboratories and which are still going on.



Although still usable after a month of exposure to weather this 2½-inch hose coupling sample of all malleable iron demonstrated that such couplings require corrosion resisting coatings. Accelerated corrosion tests on various protective coatings are currently being conducted by Underwriters' Laboratories, Inc.

photograph by courtesy of

ADT

AERO AUTOMATIC FIRE ALARM

Had it not been for Aero Automatic Fire Alarm, the above photograph of the A. B. Patrick tannery in San Francisco would not exist. It was taken a few days after a fire which unquestionably would have resulted in serious damage, if not total loss, had there been any delay in discovery or alarm.

The outbreak, caused by spontaneous ignition, occurred in an unoccupied section of the plant. Company officials stated that, had there been no automatic protection, the blaze probably would not have been discovered until it assumed sufficient proportions to be seen from outside. In view of the wooden frame construction and other hazards typical of tannery occupancies, any such delay inevitably would have resulted in disaster. As it was, Aero detected the outbreak and summoned the fire department automatically, and the blaze was extinguished before any damage resulted.

* * *

This is but one of countless cases proving that the only certain way to assure prompt detection and reporting of fire is through protection systems that operate *automatically*. With the increased hazards resulting from increased industrial activity, this type of protection is more essential than ever before. If there are any establishments in your territory faced with increased hazards through participation in defense production, sabotage possibilities, etc., we shall be glad to consult the owners about A.D.T. Protection. Your confidence will, of course, be respected. Booklets describing A.D.T. Services are available upon your request.

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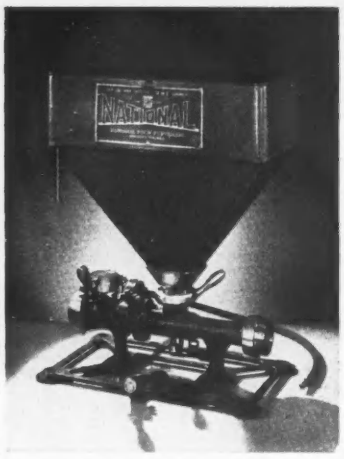

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DEFENSE NOTES

New Hampshire. A series of three schools to train instructors for auxiliary fire brigades began last month at Concord. Each group, composed of representatives from ten fire departments, is scheduled to meet two evenings a week for two weeks. Plans are under way for additional schools at Concord, Manchester and Durham.

New York. A force of 70 firemen-instructors has been developed in New York State for the purpose of reaching fire departments and the public with information on incendiary bombs and other civilian hazards in war. These men are a part of the New York State Fire Defense Training Program. Work of the instructors is supplemented by radio and other publicity. Chief instructor J. J. Deasy and a staff of five instructors are promoting the planning of mutual aid in parts of the state.

Michigan. The State Fire Marshal's Office in Michigan has issued a suggested program for training auxiliary firemen. It proposes a 12-hour course of training to be held in six weekly sessions of two hours each.

Indiana. Nine regional training schools for instructors of auxiliary firemen are planned under the direction of the Indiana fire service training school program. The training schools will be a three-day short course totaling some 27 hours.

Nebraska. The State Fire Defense Committee, headed by State Fire Marshal Crosson, has divided the state into 13 defense districts with a fire chief and assistant chief in charge of each through whom the state committee will function.

California. The State Department of Education has issued a report of two conferences of the Fire Defense Committee of the State Council of Defense. This report defines ten objectives in the civil fire defense program covering the development of a state plan for fire defense, additional legislation, training of industrial fire brigades and plans for the training of citizens in fire defense.

NEW TEXTS

The U. S. Office of Civilian Defense has issued the following publications of special interest to members of fire departments. Copies are available through state and local defense councils.

"Fire Protection in Civilian Defense." 44 pages. Prepared by the War Department and approved by the Advisory Committee on Civilian Fire Defense. Brief treatment of the general subject of fire defense, incendiaries, organization of auxiliary firemen and neighborhood fire watchers, fire fighting and fire alarm services. December 1941.

"Protection Against Gas." 84 pages. Prepared under the direction of the Chief of Chemical Warfare Service, U. S. Army. A well illustrated presentation in simple, understandable terms, of the nature of chemical warfare, the characteristics of the different types of war gases, their effects on the human body, the means of their identification and the proper measures for defense against them.

"Training Courses for Civilian Protection." 34 pages. Organization of schools and outline of courses which civilian defense workers must complete to qualify for OCD insignia. December 1941.

"Handbook for Auxiliary Firemen." 96 pages. Approved by the Advisory Committee on Civilian Fire Defense. Pictures of common fire department tools and appliances and brief treatment of the work of auxiliary firemen including pictures on how to handle incendiary bombs, December 1941.

"Handbook for Rescue Squads." 64 pages. December 1941.

"Handbook for Fire Watchers." 56 pages. January 1942.

"The Control System of the Citizens' Defense Corps." 32 pages. Under air raid conditions, all fire apparatus, rescue and other squads will be dispatched from a control center. A fire department officer at the control center will be responsible for dispatch of the fire companies and rescue squads. Shows how to set up and operate the center.

"Civilian Defense in Indiana," issued by the State Defense Council, 612 Board of Trade Building, Indianapolis. Manual No. 1. 88 pages. Gives a comprehensive description of the defense organization and legislation in that state.

The New Hampshire State Council of Defense has issued the following publications, prepared by the Division of Auxiliary Firemen, A. C. Hudson, Chairman, Concord.

"Firemen Training Classes." 52 pages. Profusely illustrated course of six training lessons for firemen.

"Volunteer Fire Departments." 46 pages. A manual on organization of normal rural fire departments and the development of auxiliary units. Also contains the state's fire laws.

"Auxiliary Fire Services Manual," Handbook No. 2. 12 pages. Outline of training for auxiliary firemen.

"Fire Brigades in Industry," Handbook No. 3. 16 pages. Organization and operation of private fire brigades.

BULLETIN-

ALL FIRE DEPARTMENTS ARE URGED TO INCREASE THEIR SUPPLY OF INDIAN FIRE PUMPS TO MEET THE ADDED RESPONSIBILITIES IMPOSED BY WAR. CIVILIAN DEFENSE REQUIRES THAT YOU BE PREPARED TO GUARD POWER PLANTS, TRANSPORTATION FACILITIES, DEFENSE INDUSTRIES, WAREHOUSES, DOCKS, ETC. AGAINST ARSON SABOTAGE AND INCENDIARY BOMBS. INDIAN FIRE PUMPS IDEALLY SUITED FOR THIS WORK. ORDER NOW FOR PROMPT SHIPMENT.

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The Conwhit Co. Klamath Falls, Ore.

Mill & Mine Supply, Inc. 2700 4th Ave. S. Seattle, Wash.

Roy G. Davis Company 617 E. 3rd St., Los Angeles, Cal.

NEW TEXTS

"Manual for Fire Fighters," published by the New Jersey State Council of Defense, 114th Infantry Armory, Trenton. 112 pages. A well prepared, complete textbook for both regular and auxiliary firemen. Prepared by a committee consisting of Leon A. Watson, Expert, Schedule Rating Office of New Jersey, Chairman, and Chief Andrew Callahan of Harrison, President, International Association of Fire Chiefs, Chief Charles A. McGinley, East Orange and Chief James Thompson, Jr., Irvington.

"Wartime Precautions," by George H. Parker, Assistant Director of Defense for Kentucky, 940 Starks Bldg., Louisville. 12 pages. Contains brief information on civilian defense, air raids, blackouts, first aid, precautions against the saboteur, fire prevention, fire protection, and instructions for constructing an outdoor shelter.

"Pump Priming Systems," by Hubert Walker. 12 pages. Educational Bulletin of the International Association of Fire Chiefs, Daniel B. Tierney, Secretary, Arlington, Mass.

ANNOUNCEMENTS

Mine Safety Appliances Company of Canada, Ltd., announces acquisition of a new building at 139 Kendal Avenue, Toronto, where a broad line of safety equipment will be quickly available to meet Canadian requirements. The Canadian-managed and staffed subsidiary of the M.S.A. of Pittsburgh, Pa., will manufacture and assemble M.S.A. products while stocking all important items of the parent company. District offices are operated in Montreal, Quebec, and New Glasgow and Sydney, N. S.

"Plant Protection Fence Supervisory Systems," an engineering report of the advantages and limitations of various types of these devices for the prevention of unauthorized entry into public and private properties, has been published by the Gamewell Company, Newton Upper Falls, Mass. 16 pages, illustrated.

"Memories of the Fire Service," is the appropriate title of a book by Captain Harvey M. Heiser, Engine Co. 3, Sacramento, California, Fire Department. Captain Heiser, a veteran of 29 years in the fire service, discusses the history of the fire service as viewed by a fire fighter. His text begins with "Fire Fighting in the Days of the Romans" and progresses all the way down to the modern fire department. Priced at $3.00, postpaid, orders should be sent to Captain Heiser.

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PYRENE PRIZE LETTER CONTEST

ANY fireman, whether a private or a chief, whether volunteer or paid, has the same chance to win in this easy contest designed to show what can be done with approved fire extinguishers. Persons not holding membership in a fire company or a fire department cannot enter this contest which is limited to firemen.

Every month the above cash prizes are paid out to those whose letters contain the best stories. More fires are put out with fire extinguishers than by any other means. The stories reported in this contest show the value of having an extinguisher handy.

It's the story we want, not letter writing ability. Get the facts down on paper and we will attend to any rewriting necessary to get the story into the space available in these columns.

The contest is sponsored cooperatively by the Pyrene Manufacturing Company of Newark, N. J., and VOLUNTEER FIREMEN to bring forth the lessons learned from actual fires of the value of fire extinguishers.

CONTEST RULES

1. Contestants in the Pyrene Prize Letter Contest must be members of their local fire department.

2. Letters are to describe actual experiences where an approved fire extinguisher of any make has saved lives or property.

3. Trade names may be used but will be deleted in publication. Publishers reserve the right to edit winning letters to permit publication.

4. Each contestant automatically vouches for the truth of the facts presented from his own or others' experience.

5. Only one letter may be submitted each month.

6. Letters must be legibly written in ink or typewritten on white paper, one side only. Preference will be given to letters not over 250 words in length.

7. Letters received after the 8th day of the month will be judged in following month's competition.

8. Monthly prizes in cash will be: 1st, $10.00; 2nd, $3.00; and 3rd, $2.00.

9. Address contest letters to Pyrene Prize Letter Contest, National Fire Protection Association, 60 Batterymarch St., Boston, Mass.

FIRST PRIZE—$10.00

R. WILSON, *Chief*
Fire Department, Texas City, Texas

Saved Life at Sea!

One morning last June while fishing for tarpon about 1½ miles out from Galveston our speedboat was resting at anchor about 500 feet from a cabin cruiser. There were quite a few passengers fishing from the cabin cruiser. Patiently waiting for a strike, I heard a very loud explosion and looking over saw the inside of the cabin cruiser burst into flames at the bow. One man was trapped in front of the fire. All the women on board the cruiser put on life belts for a trip overboard. Two men, one with a carbon tetrachloride and the other with a foam extinguisher, went into action. Before we got alongside to assist they had the fire under control and had rescued the trapped man from almost certain death. In addition they saved a pleasure craft valued at fifty or sixty thousand dollars.

●

SECOND PRIZE—$3.00

WESLEY BOWKER
Fire Department, Kearney, Nebraska

Extinguishers Needed Recharging

The other day we answered an alarm from a garage. When we arrived we saw the manager "tearing his hair" and cussing all fire extinguishers in general, and his own 2½-gallon foam unit in particular. Proving the manager wrong, one of our boys took our 2½-gallon foam extinguisher and easily put out the fire which by this time had a good start. Our investigation showed that the manager had not had his extinguishers looked at or recharged for more than two years. After seeing what was done with our extinguisher he ordered his extinguishers recharged and placed in working condition.

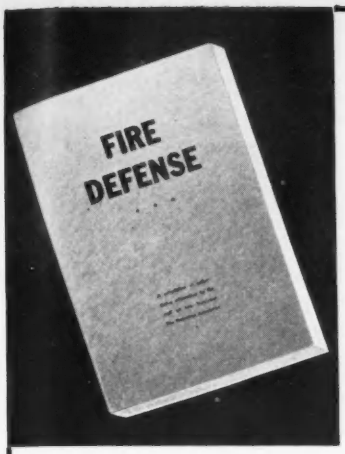
●

THIRD PRIZE—$2.00

WILLIAM J. LEE
Delmar Fire Company, Delmar, N. J.

Saved Electrical Equipment

On December 30th, while charging a storage battery in a customer's car, I noticed a little smoke coming from our new and costly high speed charger. I immediately shut off the current only to discover flames in the base of the charger. An insulated wire had been left across a resistance wire which gets hot in testing batteries, with the result that the insulation ignited and was flaming. Quickly taking a 1¼-quart carbon tetrachloride fire extinguisher the flames were put out with two strokes of the pump. No damage was done except to the burned insulation.



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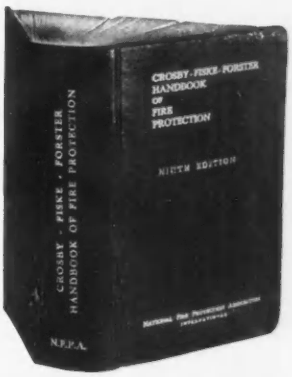

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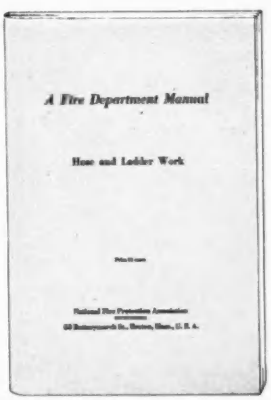

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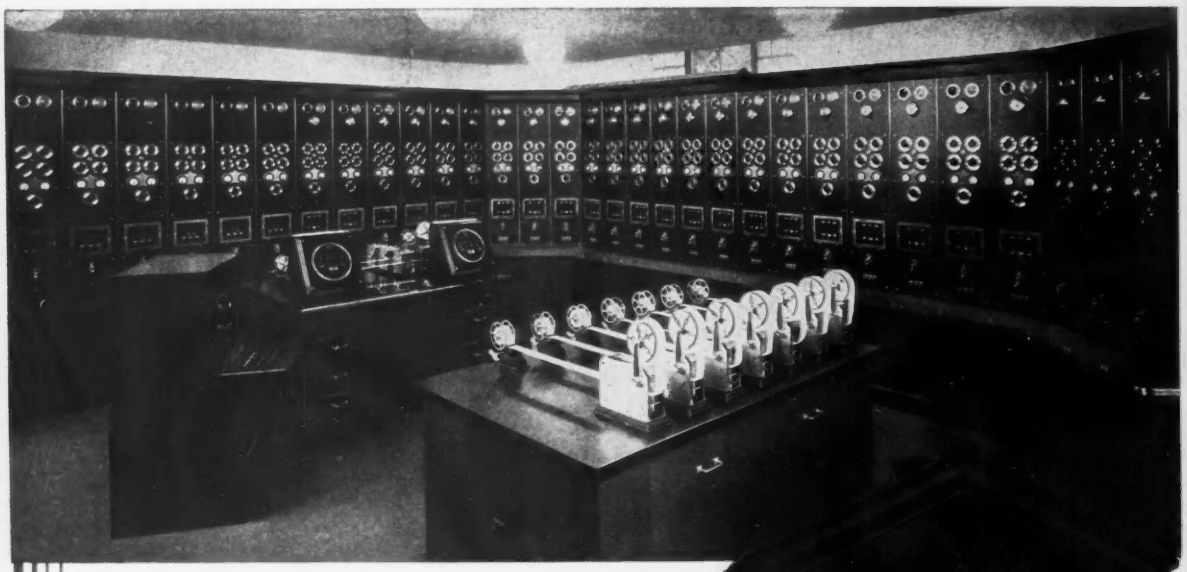
Sacramento REVIEWS THE FIRE RECORD



A view of the Central Alarm Station — the heart of Sacramento's fire defenses. Shown is the operating equipment for 25 box circuits, 3 primary, 3 secondary alarm circuits and one tapper circuit, operator's pedestal equipped with two Peerless type manual transmitters and master recording sets, the individual circuit registers and the telephone switchboard all compactly grouped for efficient operation.

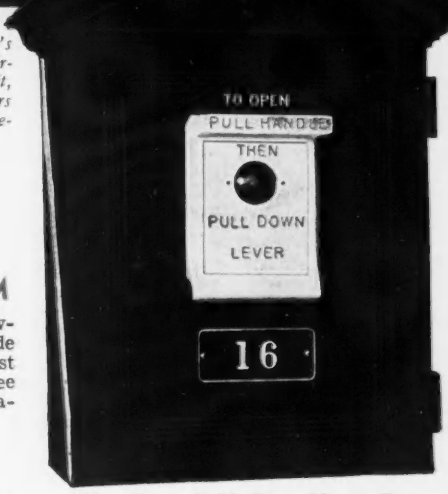
Installed in 1937, the new

GAMEWELL FIRE ALARM SYSTEM

was intended (1) to provide adequate protection for a rapidly growing city, (2) for its influence on insurance rates and (3) to provide for future expansion at a reasonable expense. The system cost approximately $265,000.00. Reviewing the fire record for the three years preceding and three years following the installation Sacramento finds the following:

FIRE LOSSES—
3 YEARS PRECEDING: 3 YEARS FOLLOWING

1935	$195,872.12	1938	$205,606.15
1936	357,501.23	1939	100,558.48
1937	265,029.41	1940	253,510.53
Total	$818,402.76	Total	$559,675.16



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